

(12) INTERNATIONAL APPLICATION PUBLISHED UNDER THE PATENT COOPERATION TREATY (PCT)

(19) World Intellectual Property
Organization
International Bureau



(43) International Publication Date
22 January 2004 (22.01.2004)

PCT

(10) International Publication Number
WO 2004/007984 A1

(51) International Patent Classification⁷: **F16C 39/06**

(21) International Application Number:
PCT/CA2003/000926

(22) International Filing Date: 18 June 2003 (18.06.2003)

(25) Filing Language: English

(26) Publication Language: English

(30) Priority Data:
60/394,528 10 July 2002 (10.07.2002) US

(71) Applicant (for all designated States except US): **TURBO-COR INC.** [CA/CA]; 1850 Trans-Canada, Doval, Quebec H9P 2N4 (CA).

(72) Inventors; and

(75) Inventors/Applicants (for US only): **SUN, Lin, Xiang** [AU/CA]; 12 Place Lacroix, Kirkland, Quebec H9J 3W5 (CA). **LIN, Hui, Yu** [AU/CA]; 10 Des Cèdres, Kirkland, Québec H9J 4A6 (CA).

(74) Agents: **DUBUC, J. et al.**; Goudreau Gage Dubuc, Stock Exchange Tower, Suite 3400, 800 Place Victoria, P.O. Box 242, Montreal, Quebec H4Z 1E9 (CA).

(81) Designated States (*national*): AE, AG, AL, AM, AT, AU, AZ, BA, BB, BG, BR, BY, BZ, CA, CH, CN, CO, CR, CU, CZ, DE, DK, DM, DZ, EC, EE, ES, FI, GB, GD, GE, GH, GM, HR, HU, ID, IL, IN, IS, JP, KE, KG, KP, KR, KZ, LC, LK, LR, LS, LT, LU, LV, MA, MD, MG, MK, MN, MW, MX, MZ, NI, NO, NZ, OM, PG, PH, PL, PT, RO, RU, SC, SD, SE, SG, SK, SL, TJ, TM, TN, TR, TT, TZ, UA, UG, US, UZ, VC, VN, YU, ZA, ZM, ZW.

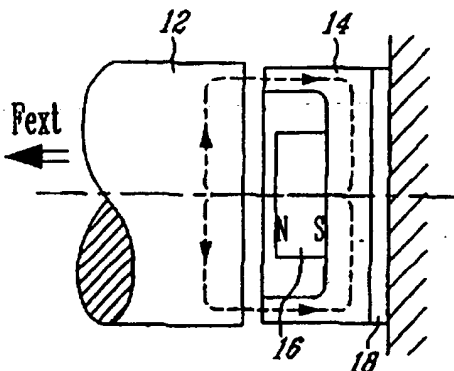
(84) Designated States (*regional*): ARIPO patent (GH, GM, KE, LS, MW, MZ, SD, SL, SZ, TZ, UG, ZM, ZW), Eurasian patent (AM, AZ, BY, KG, KZ, MD, RU, TJ, TM), European patent (AT, BE, BG, CH, CY, CZ, DE, DK, EE, ES, FI, FR, GB, GR, HU, IE, IT, LU, MC, NL, PT, RO, SE, SI, SK, TR), OAPI patent (BF, BJ, CF, CG, CI, CM, GA, GN, GQ, GW, ML, MR, NE, SN, TD, TG).

Published:

— with international search report

For two-letter codes and other abbreviations, refer to the "Guidance Notes on Codes and Abbreviations" appearing at the beginning of each regular issue of the PCT Gazette.

(54) Title: **DEVICE TO RELIEVE THRUST LOAD IN A ROTOR-BEARING SYSTEM USING PERMANENT MAGNETS**



(57) **Abstract:** The present invention provides a device and a method to enhance thrust load capacity in a rotor-bearing system. The load-enhancing device comprises a stator and a rotor arranged in such a way as to achieve a magnetic thrust load capacity enhancement by employing a number of permanent magnets, which produce an attracting force or an expelling force between the rotor and the stator.